

Fig.1
Related Art

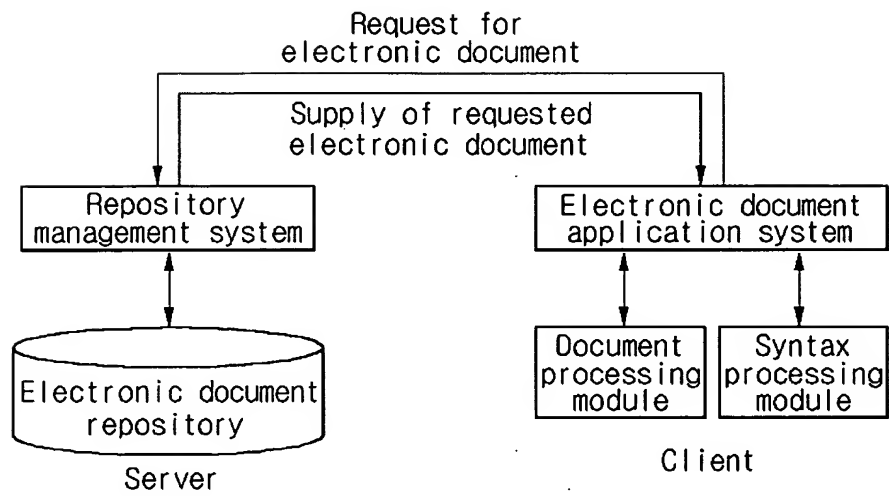


Fig.2
Related Art

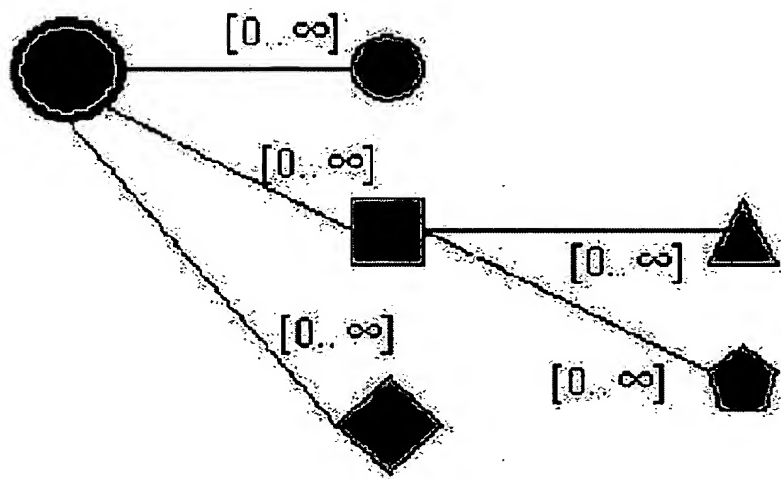


Fig.3

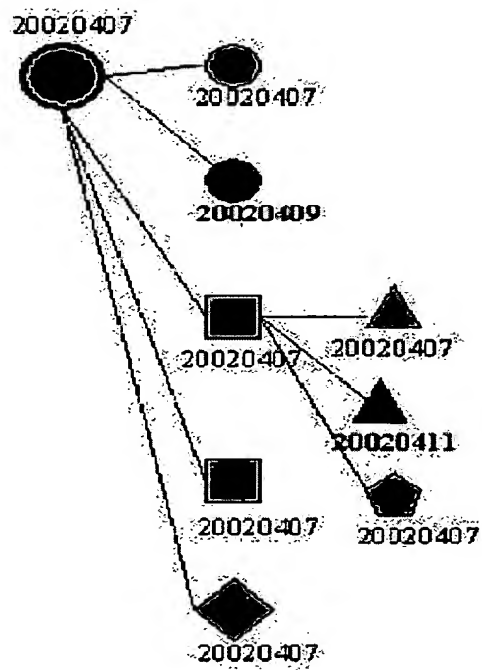


Fig.4

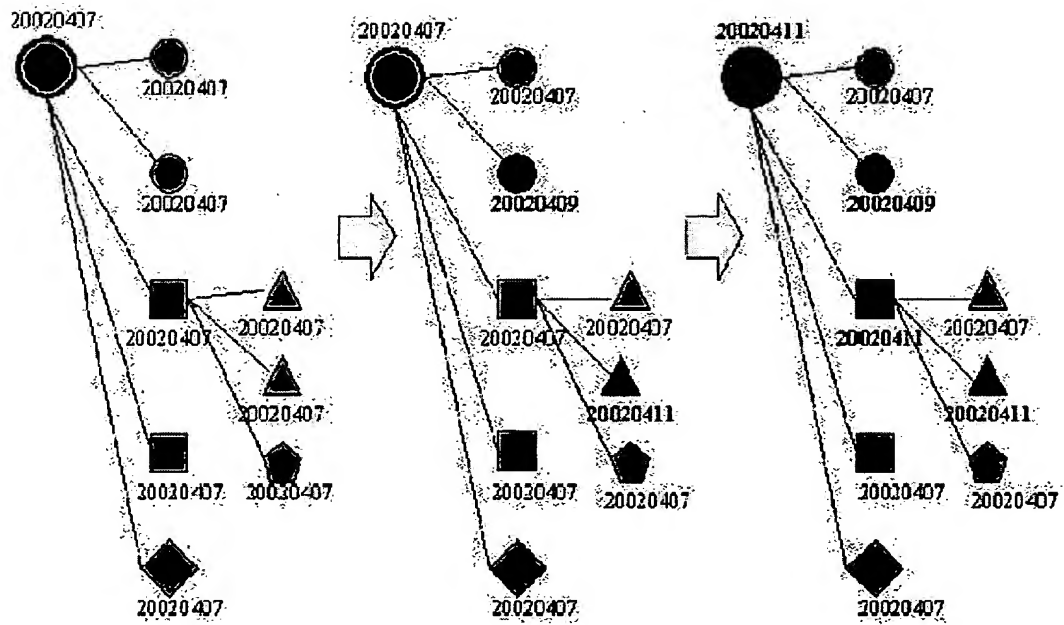


Fig.5

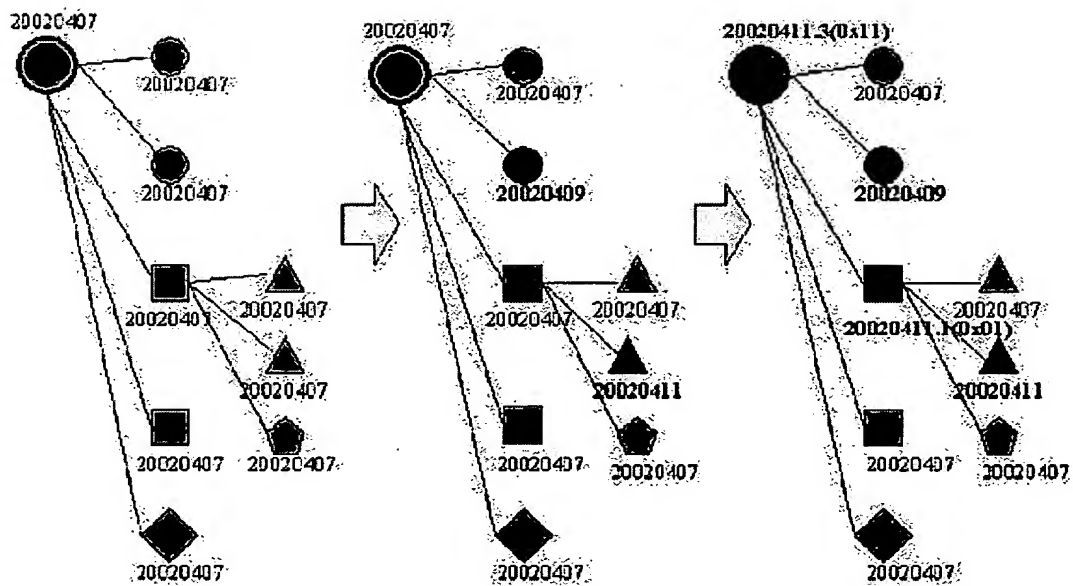


Fig.6

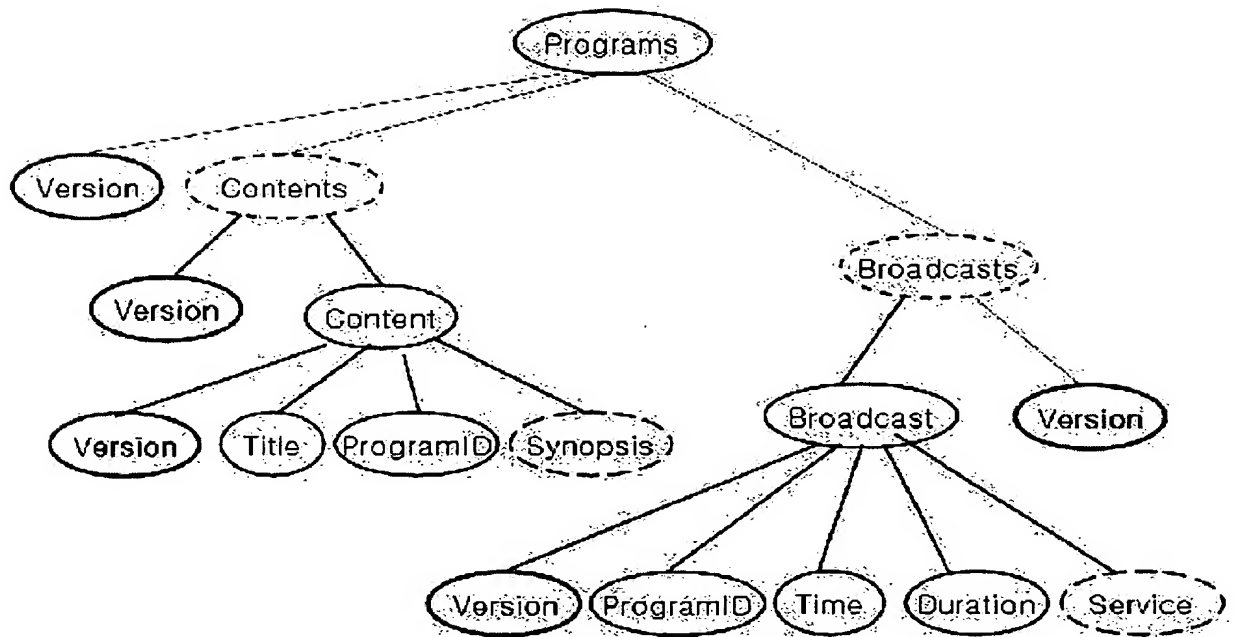


Fig.7

```
<?xml version="1.0" encoding="UTF-8"?>
<!ELEMENT Programs (Version, Contents?, Broadcasts?)>
<!ELEMENT Contents (Version, Content+)>
<!ELEMENT Content (Version, Title, ProgramID, Synopsis?)>
<!ELEMENT Version (#PCDATA)>
<!ELEMENT Title (#PCDATA)>
<!ELEMENT ProgramID (#PCDATA)>
<!ELEMENT Synopsis (#PCDATA)>
<!ELEMENT Broadcasts (Version, Broadcasts+)>
<!ELEMENT Broadcast (Version, ProgramID, Time, Duration, Service?)>
<!ELEMENT Time (#PCDATA)>
<!ELEMENT Duration (#PCDATA)>
<!ELEMENT Service (#PCDATA)>
```

Fig.8

```
<?xml version="1.0" encoding="UTF-8" ?>
<schema targetNamespace="http://www.sbs.co.kr"
  xmlns="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="unqualified">
  <import namespace="http://www.w3c.org/XML/1998/namespace"
    schemaLocation="/xml-1998.xsd" />
  <element name="Programs">
    <complexType> <sequence>
      <element name="Version" type="string">
      <element name="Contents minOccurs="0">
        <complexType> <sequence>
          <element name="Version" type="string">
          <element name="Content" maxOccurs="unbounded">
            <complexType> <sequence>
              <element name="Version" type="string">
              <element name="Title"/>
              <element name="ProgramID"/>
              <element name="Synopsis" minOccurs="0">
            </sequence> </complexType> </element>
          </sequence> </complexType> </element>
        <element name="Broadcasts" minOccurs="0">
          <complexType> <sequence>
            <element name="Version" type="string">
            <element name="Broadcast" maxOccurs="unbounded">
              <complexType> <sequence>
                <element name="Version" type="string">
                <element name="ProgramID"/>
                <element name="Time" type="dateTime"/>
                <element name="Duration" type="dateTime"/>
                <element name="Service" minOccurs="0"/>
              </sequence> </complexType> </element>
            </sequence> </complexType> </element>
          </sequence> </complexType> </element>
        </schema>
```


Fig.9

```
<?xml version="1.0" encoding="UTF-8" ?>
<Programs>
  <Version>20020407</Version>
  <Contents>
    <Version>20020407</Version>
    <Content>
      <Version>20020407</Version> <Title>Friends</Title>
      <ProgramID>KTLA-2002-0324</ProgramID> </Content>
    <Content>
      <Version>20020407</Version> <Title>Will & Grace</Title>
      <ProgramID>KTLA-2002-0391</ProgramID> </Content>
    <Content>
      <Version>20020407</Version> <Title>MAJOR LEAGUE BASEBALL</Title>
      <ProgramID>ESPN-2002-0114</ProgramID> </Content>
    <Content>
      <Version>20020407</Version> <Title>Sesame Street </Title>
      <ProgramID>KCET-2002-0115</ProgramID> </Content>
  </Contents>
  <Broadcasts>
    <Version>20020407</Version>
    <Broadcast>
      <Version>20020407</Version> <ProgramID>KTLA-2002-0324</ProgramID>
      <Time>2002-04-22 21:55</Time> <Duration>110m</Duration>
      <Service>KTLA</Service> </Broadcast>
    <Broadcast>
      <Version>20020407</Version> <ProgramID>KTLA-2002-0391</ProgramID>
      <Time>2002-04-29 21:55</Time> <Duration>70m</Duration>
      <Service>KTLA</Service> </Broadcast>
    <Broadcast>
      <Version>20020407</Version> <ProgramID>ESPN-2002-0114</ProgramID>
      <Time>2002-04-09 15:00</Time> <Duration>120m</Duration>
      <Service>ESPN</Service> </Broadcast>
    <Broadcast>
      <Version>20020407</Version> <ProgramID>KCET-2002-0115</ProgramID>
      <Time>2002-04-09 17:00</Time> <Duration>30m</Duration>
      <Service>KCET</Service> </Broadcast>
  </Broadcasts>
</Programs>
```

Fig.10

```
<?xml version="1.0" encoding="UTF-8" ?>
<Programs>
  <Version>20020407</Version>
  <Contents>
    <Version>20020407</Version>
    <Content>
      <Version>20020407</Version> <Title>Friends</Title>
      <ProgramID>KTLA-2002-0324</ProgramID> </Content>
    <Content>
      <Version>20020407</Version> <Title>Will & Grace</Title>
      <ProgramID>KTLA-2002-0391</ProgramID> </Content>
    <Content>
      <Version>20020407</Version> <Title> MAJOR LEAGUE BASEBALL </Title>
      <ProgramID>ESPN-2002-0114</ProgramID> </Content>
    <Content>
      <Version>20020407</Version> <Title>Sesame Street</Title>
      <ProgramID>KCET-2002-0115</ProgramID> </Content>
    <Content>
      <Version>20020408</Version> <Title>Larry King</Title>
      <ProgramID>CNN-2002-0394</ProgramID> </Content>
  </Contents>
  <Broadcasts>
    <Version>20020407</Version>
    <Broadcast>
      <Version>20020407</Version> <ProgramID>KTLA-2002-0324</ProgramID>
      <Time>2002-04-22 21:55</Time> <Duration>110m</Duration>
      <Service>KTLA</Service> </Broadcast>
    <Broadcast>
      <Version>20020407</Version> <ProgramID>KTLA-2002-0391</ProgramID>
      <Time>2002-04-29 21:55</Time> <Duration>70m</Duration>
      <Service>KTLA</Service> </Broadcast>
    <Broadcast>
      <Version>20020409</Version> <ProgramID>ESPN-2002-0114</ProgramID>
      <Time>2002-04-09 15:00</Time> <Duration>130m</Duration>
      <Service>ESPN</Service> </Broadcast>
    <Broadcast>
      <Version>20020409</Version> <ProgramID>KCET-2002-0115</ProgramID>
      <Time>2002-04-09 17:10</Time> <Duration>30m</Duration>
      <Service>KCET</Service> </Broadcast>
    <Broadcast>
      <Version>20020408</Version> <ProgramID>CNN-2002-0394</ProgramID>
      <Time>2002-04-19 00:55</Time> <Duration>60m</Duration>
      <Service>CNN</Service> </Broadcast>
  </Broadcasts>
</Programs>
```

Fig.11

```
<?xml version="1.0" encoding="UTF-8" ?>
<Programs>
  <Version>20020409</Version>
  <Contents>
    <Version>20020409</Version>
    <Content>
      <Version>20020407</Version> <Title>Friends</Title>
      <ProgramID>KTLA-2002-0324</ProgramID> </Content>
    <Content>
      <Version>20020407</Version> <Title>Will & Grace</Title>
      <ProgramID>KTLA-2002-0391</ProgramID> </Content>
    <Content>
      <Version>20020407</Version> <Title> MAJOR LEAGUE BASEBALL </Title>
      <ProgramID>ESPN-2002-0114</ProgramID> </Content>
    <Content>
      <Version>20020407</Version> <Title>Sesame Street</Title>
      <ProgramID>KCET-2002-0115</ProgramID> </Content>
    <Content>
      <Version>20020408</Version> <Title>Larry King</Title>
      <ProgramID>CNN-2002-0394</ProgramID> </Content>
  </Contents>
  <Broadcasts>
    <Version>20020409</Version>
    <Broadcast>
      <Version>20020407</Version> <ProgramID>KTLA-2002-0324</ProgramID>
      <Time>2002-04-22 21:55</Time> <Duration>110m</Duration>
      <Service>KTLA</Service> </Broadcast>
    <Broadcast>
      <Version>20020407</Version> <ProgramID>LTLA-2002-0391</ProgramID>
      <Time>2002-04-29 21:55</Time> <Duration>70m</Duration>
      <Service>KTLA</Service> </Broadcast>
    <Broadcast>
      <Version>20020409</Version> <ProgramID>ESPN-2002-0114</ProgramID>
      <Time>2002-04-09 15:00</Time> <Duration>130m</Duration>
      <Service>ESPN</Service> </Broadcast>
    <Broadcast>
      <Version>20020409</Version> <ProgramID>KCET-2002-0115</ProgramID>
      <Time>2002-04-09 17:10</Time> <Duration>30m</Duration>
      <Service>KCET</Service> </Broadcast>
    <Broadcast>
      <Version>20020408</Version> <ProgramID>CNN-2002-0394</ProgramID>
      <Time>2002-04-19 00:55</Time> <Duration>60m</Duration>
      <Service>CNN</Service> </Broadcast>
  </Broadcasts>
</Programs>
```

Fig.12

```
<?xml version="1.0" encoding="UTF-8" ?>
<Programs>
  <Version>20020409.3</Version>
  <Contents>
    <Version>20020409.1</Version>
    <Content>
      <Version>20020407</Version> <Title>Friends</Title>
      <ProgramID>KTLA-2002-0324</ProgramID> </Content>
    <Content>
      <Version>20020407</Version> <Title>Will & Grace</Title>
      <ProgramID>KTLA-2002-0391</ProgramID> </Content>
    <Content>
      <Version>20020407</Version> <Title> MAJOR LEAGUE BASEBALL </Title>
      <ProgramID>ESPN-2002-0114</ProgramID> </Content>
    <Content>
      <Version>20020407</Version> <Title>Sesame Street</Title>
      <ProgramID>KCET-2002-0115</ProgramID> </Content>
    <Content>
      <Version>20020408</Version> <Title>Larry King</Title>
      <ProgramID>CNN-2002-0394</ProgramID> </Content>
  </Contents>
  <Broadcasts>
    <Version>20020409.1</Version>
    <Broadcast>
      <Version>20020407</Version> <ProgramID>KTLA-2002-0324</ProgramID>
      <Time>2002-04-22 21:55</Time> <Duration>110m</Duration>
      <Service>KTLA</Service> </Broadcast>
    <Broadcast>
      <Version>20020407</Version> <ProgramID>KTLA-2002-0391</ProgramID>
      <Time>2002-04-29 21:55</Time> <Duration>70m</Duration>
      <Service>KTLA</Service> </Broadcast>
    <Broadcast>
      <Version>20020409</Version> <ProgramID>ESPN-2002-0114</ProgramID>
      <Time>2002-04-09 15:00</Time> <Duration>130m</Duration>
      <Service>ESPN</Service> </Broadcast>
    <Broadcast>
      <Version>20020409</Version> <ProgramID>KCET-2002-0115</ProgramID>
      <Time>2002-04-09 17:10</Time> <Duration>30m</Duration>
      <Service>KCET</Service> </Broadcast>
    <Broadcast>
      <Version>20020408</Version> <ProgramID>CNN-2002-0394</ProgramID>
      <Time>2002-04-19 00:55</Time> <Duration>60m</Duration>
      <Service>CNN</Service> </Broadcast>
  </Broadcasts>
</Programs>
```

Fig.13

```
<?xml version="1.0" encoding="UTF-8" ?>
<Programs>
  <Version>20020407</Version>
  <Contents>
    <Version>20020407</Version>
    <Content>
      <Version>20020408</Version>
      <Title>Larry King</Title>
      <ProgramID>CNN-2002-0394</ProgramID>
    </Content>
  </Contents>
  <Broadcasts>
    <Version>20020407</Version>
    <Broadcast>
      <Version>20020409</Version>
      <ProgramID>ESPN-2002-0114</ProgramID>
      <Time>2002-04-09 15:00</Time>
      <Duration>130m</Duration>
      <Service>ESPN</Service>
    </Broadcast>
    <Broadcast>
      <Version>20020409</Version>
      <ProgramID>KCET-2002-0115</ProgramID>
      <Time>2002-04-09 17:10</Time>
      <Duration>30m</Duration>
      <Service>KCET</Service>
    </Broadcast>
    <Broadcast>
      <Version>20020408</Version>
      <ProgramID>CNN-2002-0394</ProgramID>
      <Time>2002-04-19 00:55</Time>
      <Duration>60m</Duration>
      <Service>CNN</Service>
    </Broadcast>
  </Broadcasts>
</Programs>
```

Fig.14

```
<?xml version="1.0" encoding="UTF-8" ?>
<Programs>
  <Version>20020409</Version>
  <Contents>
    <Version>20020409</Version>
    <Content>
      <Version>20020408</Version>
      <Title>Larry King</Title>
      <ProgramID>CNN-2002-0394</ProgramID>
    </Content>
  </Contents>
  <Broadcasts>
    <Version>20020409</Version>
    <Broadcast>
      <Version>20020409</Version>
      <ProgramID>ESPN-2002-0114</ProgramID>
      <Time>2002-04-09 15:00</Time>
      <Duration>130m</Duration>
      <Service>ESPN</Service>
    </Broadcast>
    <Broadcast>
      <Version>20020409</Version>
      <ProgramID>KCET-2002-0115</ProgramID>
      <Time>2002-04-09 17:10</Time>
      <Duration>30m</Duration>
      <Service>KCET</Service>
    </Broadcast>
    <Broadcast>
      <Version>20020408</Version>
      <ProgramID>CNN-2002-0394</ProgramID>
      <Time>2002-04-19 00:55</Time>
      <Duration>60m</Duration>
      <Service>CNN</Service>
    </Broadcast>
  </Broadcasts>
</Programs>
```

Fig.15

```
<?xml version="1.0" encoding="UTF-8" ?>
<Programs>
  <Version>20020407</Version>
  <Broadcasts>
    <Version>20020407</Version>
    <Broadcast>
      <Version>20020409</Version>
      <ProgramID>ESPN-2002-0114</ProgramID>
      <Time>2002-04-09 15:00</Time>
      <Duration>130m</Duration>
      <Service>ESPN</Service>
    </Broadcast>
    <Broadcast>
      <Version>20020409</Version>
      <ProgramID>KCET-2002-0115</ProgramID>
      <Time>2002-04-09 17:10</Time>
      <Duration>30m</Duration>
      <Service>KCET</Service>
    </Broadcast>
    <Broadcast>
      <Version>20020408</Version>
      <ProgramID>CNN-2002-0394</ProgramID>
      <Time>2002-04-19 00:55</Time>
      <Duration>60m</Duration>
      <Service>CNN</Service>
    </Broadcast>
  </Broadcasts>
</Programs>
```

Fig.16

```
<?xml version="1.0" encoding="UTF-8" ?>
<Programs>
  <Version>20020409</Version>
  <Broadcasts>
    <Version>20020409</Version>
    <Broadcast>
      <Version>20020409</Version>
      <ProgramID>ESPN-2002-0114</ProgramID>
      <Time>2002-04-09 15:00</Time>
      <Duration>130m</Duration>
      <Service>ESPN</Service>
    </Broadcast>
    <Broadcast>
      <Version>20020409</Version>
      <ProgramID>KCET-2002-0115</ProgramID>
      <Time>2002-04-09 17:10</Time>
      <Duration>30m</Duration>
      <Service>KCET</Service>
    </Broadcast>
    <Broadcast>
      <Version>20020408</Version>
      <ProgramID>CNN-2002-0394</ProgramID>
      <Time>2002-04-19 00:55</Time>
      <Duration>60m</Duration>
      <Service>CNN</Service>
    </Broadcast>
  </Broadcasts>
</Programs>
```


Fig.17

```
<?xml version="1.0" encoding="UTF-8"?>
<Invalid>
  <Programs>
    <Broadcast>
      <Version>20020110</Version>
      <ProgramID>CNN-2002-0394</ProgramID>
    </Broadcast>
  </Programs>
</Invalid>
<Programs>
  <Version>20020407</Version>
  <Broadcasts>
    <Version>20020407</Version>
    <Broadcast>
      <Version>20020409</Version>
      <ProgramID>ESPN-2002-0114</ProgramID>
      <Time>2002-04-09 15:00</Time>
      <Duration>130m</Duration>
      <Service>ESPN</Service>
    </Broadcast>
    <Broadcast>
      <Version>20020409</Version>
      <ProgramID>KCET-2002-0115</ProgramID>
      <Time>2002-04-09 17:10</Time>
      <Duration>30m</Duration>
      <Service>KCET</Service>
    </Broadcast>
    <Broadcast>
      <Version>20020408</Version>
      <ProgramID>CNN-2002-0394</ProgramID>
      <Time>2002-04-19 00:55</Time>
      <Duration>60m</Duration>
      <Service>CNN</Service>
    </Broadcast>
  </Broadcasts>
</Programs>
```

Fig.18

```
<?xml version="1.0" encoding="UTF-8"?>
<Invalid>
  <Programs>
    <Broadcast>
      <Version>20020110</Version>
      <ProgramID>CNN-2002-0394</ProgramID>
    </Broadcast>
  </Programs>
</Invalid>
<Programs>
  <Version>20020409</Version>
  <Broadcasts>
    <Version>20020409</Version>
    <Broadcast>
      <Version>20020409</Version>
      <ProgramID>ESPN-2002-0114</ProgramID>
      <Time>2002-04-09 15:00</Time>
      <Duration>130m</Duration>
      <Service>ESPN</Service>
    </Broadcast>
    <Broadcast>
      <Version>20020409</Version>
      <ProgramID>KCET-2002-0115</ProgramID>
      <Time>2002-04-09 17:10</Time>
      <Duration>30m</Duration>
      <Service>KCET</Service>
    </Broadcast>
    <Broadcast>
      <Version>20020408</Version>
      <ProgramID>CNN-2002-0394</ProgramID>
      <Time>2002-04-19 00:55</Time>
      <Duration>60m</Duration>
      <Service>CNN</Service>
    </Broadcast>
  </Broadcasts>
</Programs>
```